

<p>DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Housing—Federal Housing Commissioner</p> <p>TO: DIRECTOR, HOUSING DIVISION DIRECTOR, MULTIFAMILY DIVISION DIRECTOR, SINGLE FAMILY DIVISION</p>	<p>STRUCTURAL ENGINEERING BULLETIN NO. 1067 Rev. 3 (Supersedes issue dated April 2, 1992)</p> <p>ISSUE DATE: September 25, 1997</p> <p>REVIEW DATE: September 25, 2000</p>
<p>SUBJECT: 1. Item Description Foam Core Panels and Components for Single-Story Dwelling Units</p> <p>2. Name and address of Manufacturer Enercept, Inc. 3100 9th Avenue, S.E. Watertown, SD 57201-9102</p>	

This Structural Engineering Bulletin (SEB) should be filed with other SEBs and related Bulletins on materials or products as required by prescribed procedures.

The technical description, requirements and limitations expressed herein do not constitute an endorsement or approval by the Department of Housing and Urban Development (HUD) of the subject matter, and any statement or representation, however made, indicating approval or endorsement by HUD is unauthorized and false, and will be considered a violation of the United States Criminal Code, 18 U.S.C. 709.

NOTICE: THIS BULLETIN APPLIES TO DWELLING UNITS BUILT UNDER HUD HOUSING PROGRAMS. NON-HUD INSURED UNITS MAY OR MAY NOT BE IN CONFORMITY WITH THE REQUIREMENTS OF THE HUD MINIMUM PROPERTY STANDARDS.

Any reproduction of this Bulletin must be in its entirety and any use of all or any part of this Bulletin in sales promotion or advertising is prohibited.

1. General:

This Bulletin sets forth specific requirements under the Technical Suitability of Products Program for determining the eligibility of housing to be constructed under HUD mortgage insurance, or other HUD housing programs.

2. Scope:

This Bulletin applies only to the structural features of this method of construction. Final determination of eligibility is made by the appropriate HUD Field Office. Other factors considered by the Field Office will be valuation, location, architectural planning and appeal, mechanical equipment, thermal characteristics, and market acceptance. Consideration is also necessary to determine whether a specific property will qualify under the specific HUD program, when constructed according to the method outlined in this Bulletin, and where the structure is to be located.

In geographical areas subject to hurricanes, earthquakes, or other severe conditions affecting dwelling structures, the HUD Field Office shall require additional safeguards in proposed designs, when necessary.

3. Minimum Property Standards (MPS):

Compliance with HUD MPS is determined by the HUD Field Office on the same basis as submissions involving conventional construction, except for the special features described in this Bulletin.

4. Inspection:

Field compliance inspections covering conventional items of construction and any special features covered in this Bulletin shall be made in accordance with prescribed procedures.

The appropriate HUD Field Office shall furnish a copy of a HUD field inspection report to Headquarters, Manufactured Housing and Standards Division, Office of Consumer and Regulatory Affairs, when there is:

- a. Evidence of noncompliance with any portion of the system of construction described in this Bulletin.
- b. Faulty shop fabrication, including significant surface defects.
- c. Damage to shop fabricated items or materials due to improper transportation, storage, handling, or assembly.
- d. Unsatisfactory field workmanship or performance of the product or system.
- e. Any significant degradation or deterioration of the product or evidence of lack of durability or performance.

Periodic plant inspections will be made by HUD Field Office or State Agency personnel in accordance with their prescribed procedures. Factory inspection reports shall be submitted to HUD Headquarters, upon request.

5. Certification:

The manufacturer named in this Bulletin shall furnish the builder with written certification stating that the product has been manufactured in compliance with the HUD Minimum Property Standards (MPS), except as modified by this Bulletin. The builder shall endorse the certification with a statement that the product has been erected in compliance with HUD MPS, except as modified by this Bulletin, and that the manufacture's certification does not relieve the builder, in any way, of the responsibility under the terms of the Builder's Warranty required by the National Housing Act, or under any provisions applicable to any other housing program. This certification shall be furnished to the HUD Field Office upon completion of the property.

OUTLINE DESCRIPTION, CATEGORY II CONSTRUCTION

GENERAL:

Shop fabricated foam core panels for walls, foundation walls, floors, and roofs for one-story dwelling units are furnished in this method of construction. Components are transported to the building site, where they are erected and assembled on conventional or all-weather wood foundations.

All materials and methods of installation shall be in accordance with HUD Minimum Property Standards (MPS), Use of Materials Bulletins (UM), and Materials Releases (MR), except as may be specifically noted herein. Plumbing, heating and electrical systems are field installed.

This Bulletin is based on a structural review of the Grandeur Model of Enercept, Inc. Building Systems, but may be considered applicable to all structurally similar units of this company. Nonstructural items (such as architectural, plumbing, heating and electrical features) are not covered by this Bulletin.

SPECIFICATIONS:

Form HUD-92005, "Description of Materials" specifying only the structurally related items (Nos. 1 to 12, 14, 26 and 27), as originally submitted for technical suitability determination, describes the materials that shall be used in construction of housing units under this system of construction. Form HUD-92005, furnished with each application for use under HUD housing programs, shall include as a minimum the same structural materials.

DRAWINGS:

The following drawings by Enercept, Inc. shall be considered an integral part of this Bulletin:

<u>Drawing No.</u>	<u>Date*</u>	<u>Description</u>
0165-001	July 14, 1995	Floor Plan
0165-002	July 14, 1995	Elevations
0165-003	July 14, 1995	Wall Panel Layout
0165-004	July 14, 1995	Roof & Floor Panels
ECPT-7	July 14, 1995	Sill to Subfloor Installation
ECPT-8	July 14, 1995	Standard Panel Installation
ECPT-10	July 14, 1995	King Post Installation
ECPT-11	July 14, 1995	Upper Plate Installation
ECPT-13	Oct. 25, 1985	Center Beam & Support Wall
ECPT-18	July 14, 1995	Roof Panel Installation
ECPT-26	July 14, 1995	Gable Panel
ECPT-28	July 14, 1995	Window Lintel Panel
ECPT-29	July 14, 1995	Roof Panel
ECPT-34	July 14, 1995	Upper & Lower Plates
ECPT-37	Nov. 18, 1982	Center Support Post
ECPT-38	July 14, 1995	Roof - Gable Connection
ECPT-40	July 14, 1995	Floor Panel
ECPT-44	July 14, 1995	Roof Panel - Beam Connection
ECPT-45	July 14, 1995	Roof Panel Connections
ECPT-46	July 14, 1995	4'-0" Standard Panels
ECPT-47	July 14, 1995	2'-0" Standard Panels
ECPT-48	July 14, 1995	1'-0" Standard Panels
ECPT-53	July 14, 1995	Gable Detail
ECPT-57	July 14, 1995	Last Wall Panel Installation
ECPT-58	July 14, 1995	Center Wall Detail
ECPT-59	July 14, 1995	Last Roof Panel Installation
ECPT-60	July 14, 1995	Corner Panel Installation
ECPT-61	July 14, 1995	Basement Sill Plate Installation
ECPT-69	July 6, 1995	Door Frame Detail & Installation
ECPT-70	July 14, 1995	Basement Wall Detail
ECPT-72	July 14, 1995	Wall Sections
ECPT-90	July 14, 1995	4'-0" Basement Panels
ECPT-106	July 14, 1995	Installation of Corner Panel
ECPT-107	July 14, 1995	Roof Panel Installation

The Builder shall submit construction drawings to the HUD Field Office with each application under HUD housing programs, which shall include the same or similar structural features as shown on the drawings listed above. Copies of these listed drawings shall also be furnished to the HUD Field Office by the Builder upon request.

SPECIAL CONSTRUCTION FEATURES:

Wall Panels and Partitions: Wall Panels consist of a 5 1/2" thick expanded polystyrene foam core faced on both sides with 1/2" thick strandboard or waferboard skins bonded to the core with a non-flammable contact adhesive. Density of the foam core is approximately 1.0 pcf. Wall panels are assembled in standard 4 ft. or special sized modules with a flat 2 x 4 stud fastened to each face. A double 2 x 6 top plate and a single 2 x 6 sill plate are field installed. Partitions are conventionally framed. All interior surfaces are covered with 1/2" thick gypsum wallboard attached on-site to particleboard skins using adhesive and/or mechanical fasteners.

Basement Walls: All Weather Wood Foundations (AWWF) shall be installed according to Technical Report No. 7 and the All Weather Wood Foundation System Manual, by the National Forest Products Association. Basement wall panels consist of 5 1/2" thick expanded polystyrene foam core faced on the interior side with 1/2" thick strandboard or waferboard, and on the exterior with 1/2" thick treated FDN grade plywood, laminated to the foam core.

Basement wall panels are assembled in standard 4'-0" wide or special size modules with treated 2 x 6's at 16" on center or 2'-0" on center, as required by design loads. Treated 2 x 6 sill plates are field installed. All interior surfaces are covered with 1/2" thick gypsum wallboard attached on-site to interior skins using adhesive and/or mechanical fasteners.

Roof: Roof panels consist of a 7 3/8" thick expanded polystyrene foam core faced on both sides with 1/2" thick waferboard or strandboard skins bonded to the core, and 2 x 8's @ 4' on center. Density of the foam core is approximately 1.0 pcf. Panels are 4'-0" wide and up to 16'-0" long, generally spanning from the outside wall to a center ridge beam. Panels are fastened to exterior walls and to center ridge beam with galvanized steel connector plates. Exposed panels (ceilings) are covered on-site with 1/2" thick gypsum wallboard, using adhesive and/or mechanical fasteners.

Floor Panels: Floor panels consist of a 7 3/8" thick expanded polystyrene foam core faced on both sides with 1/2" thick particleboard skins bonded to the core. Density of the foam core is approximately 1.0 pcf. Floor framing members are spaced at 2'-0" on center. Panels are 4'-0" wide and up to 16'-0" long.

Fire Protection and Interior Finish: Roof and wall panels shall have a 20 minute fire rating and a 15 minute finish fire rating in accordance with ASTM E 119. The foam core shall have a maximum flame spread rating of 25 in accordance with ASTM E 84, and a smoke density rating of 450 or less in accordance with National Fire Protection Association (NFPA) No. 258.

Caution shall be exercised in the use of foam plastics. If foam plastics are allowed to remain exposed or unprotected they may under some circumstances produce rapid flame spread, quick flashover, intense heat, dense smoke, toxic and flammable gases and may present a serious fire hazard. The manufacturer of the foam plastic or the Society of the Plastics Industry, Inc., shall be consulted for instructions to minimize the risk in the use of these products in manufacture and in construction.

DESIGN AND CONSTRUCTION REQUIREMENTS:

Construction Guide: Applicable sheets of the Enercept, Inc. "Foam Core Panel Construction Guide", latest edition, shall also be considered an integral part of this Bulletin.

Design Loads: The method described in this Bulletin is based on maximum design loads of 40 psf for snow, Seismic Zone 1 and a Basic Wind Speed of 100 mph and Exposure C (ASCE 7-88). The manufacturer shall submit structural calculations to the local HUD Office if housing units are to be located in geographical areas where these conditions are exceeded.

Framing of Loadbearing Walls: Wood-to-wood connections shall be provided between bearing walls and roof/ceiling or floor construction. Floor covering, including carpeting and vinyl tile, shall not be continued under loadbearing walls.

MANUFACTURING PLANT:

Components covered under this Bulletin will be produced in the following plant:

Enercept, Inc.
3100 9th Avenue SE
Watertown, SD 57201

The Sioux Falls HUD Office will inspect this plant in accordance with prescribed procedures.

QUALITY CONTROL:

The appropriate HUD Field Office in whose jurisdiction the manufacturing plant is located must review and approve plant fabrication procedures and quality control program, and shall report to Headquarters in accordance with outstanding instructions. The quality control program shall include field erection or supervision by Enercept, Inc.

RECORD OF PROPERTIES:

The manufacturer shall provide a list of the first ten properties in which the component or system described in this Bulletin is used. The list shall include the complete address, or description of location, and approximate date of installation or erection. Failure of the manufacturer to provide HUD with the above information may result in cancellation of this Bulletin.

NOTICE OF CHANGES:

The manufacturer shall inform HUD in advance of changes in production facilities, transportation, field erection procedures, design, or of materials used in this product. Further, the manufacturer must inform HUD of any revision to corporate structure, change of address or change in name or affiliation of the prime manufacturer. Failure of the manufacturer to notify HUD of any of the above changes may result in cancellation of this Bulletin.

EVALUATION:

This SEB shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this SEB shall apply for a renewal or revision 90 days prior to the Review Date printed on this SEB. Submittals for renewal or revision shall be sent to HUD Headquarters. Appropriate User Fees shall be sent to:

U. S. Department of Housing and Urban Development
Technical Suitability of Products Fees
P. O. Box 954199
St. Louis, MO 63195-4199

The holder of this SEB may apply for revision at any time prior to the Review Date. Amendments or minor revisions may be in the form of a supplement.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program", and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the SEB. HUD will notify the manufacturer that the SEB may be canceled when:

1. conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system,
2. the manufacturer has changed its organizational form without notifying HUD, or
3. the manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice of the specific reasons for cancellation, and the opportunity to present views on why the SEB should not be canceled. No refund of fees will be made on a canceled document.

This Structural Engineering Bulletin is issued solely for the captioned firm and is not transferable to any person or successor entity.
